



Complete Summary

TITLE

Prevention of central venous catheter (CVC)-related infections: percentage of maintenance failures in CVCs.

SOURCE(S)

Ministry of Health. Safe practices indicators project: background, summary of methods and measurement strategies. Madrid: Ministry of Health; 2009 Feb 20. 97 p.

Measure Domain

PRIMARY MEASURE DOMAIN

Process

The validity of measures depends on how they are built. By examining the key building blocks of a measure, you can assess its validity for your purpose. For more information, visit the [Measure Validity](#) page.

SECONDARY MEASURE DOMAIN

Does not apply to this measure

Brief Abstract

DESCRIPTION

This measure is used to determine the percentage of maintenance failures in central venous catheters (CVCs). Items to be assessed are the following:

- Use of sterile gauze or transparent sterile dressing to cover catheter insertion point
- Caps on lumens not in use
- Clamps on lumens not in use

RATIONALE

Vascular catheter-related infections are the leading cause of hospital-acquired bloodstream infections and are associated with significant morbidity in critically ill patients. Most central venous catheter (CVC)-related infections are considered

preventable. After CVC insertion, correct care may play a crucial role in preventing CVC-related infections.

Main aim of indicator: to reduce the number of CVCs with care failures.

PRIMARY CLINICAL COMPONENT

Central venous catheter (CVC); maintenance failure

DENOMINATOR DESCRIPTION

Total number of central venous catheters (CVCs) studied x lumens not in use x possible failures assessed

NUMERATOR DESCRIPTION

Number of failures in the care of central venous catheters (CVCs) observed x 100 (see the related "Numerator Inclusions/Exclusions" field in the Complete Summary)

Evidence Supporting the Measure

EVIDENCE SUPPORTING THE CRITERION OF QUALITY

- A clinical practice guideline or other peer-reviewed synthesis of the clinical evidence
- A formal consensus procedure involving experts in relevant clinical, methodological, and organizational sciences
- A systematic review of the clinical literature
- One or more research studies published in a National Library of Medicine (NLM) indexed, peer-reviewed journal

Evidence Supporting Need for the Measure

NEED FOR THE MEASURE

Overall poor quality for the performance measured
Variation in quality for the performance measured

EVIDENCE SUPPORTING NEED FOR THE MEASURE

Ministerio de Sanidad y Consumo. Indicadores de buenas practicas sobre seguridad del paciente. Resultados de su medicion en una muestra de hospitales del sistema nacional de salud Español. Madrid: Ministerio de Sanidad y Consumo; 2008. 95 p.

State of Use of the Measure

STATE OF USE

Current routine use

CURRENT USE

Internal quality improvement

Application of Measure in its Current Use

CARE SETTING

Hospitals

PROFESSIONALS RESPONSIBLE FOR HEALTH CARE

Advanced Practice Nurses
Nurses
Physicians

LOWEST LEVEL OF HEALTH CARE DELIVERY ADDRESSED

Single Health Care Delivery Organizations

TARGET POPULATION AGE

Unspecified

TARGET POPULATION GENDER

Either male or female

STRATIFICATION BY VULNERABLE POPULATIONS

Unspecified

Characteristics of the Primary Clinical Component

INCIDENCE/PREVALENCE

57.2% \pm 1.4 (95% Confidence Interval) of central venous catheters (CVCs) are not correctly maintained (one or more of the possible maintenance failures).

EVIDENCE FOR INCIDENCE/PREVALENCE

Ministerio de Sanidad y Consumo. Indicadores de buenas practicas sobre seguridad del paciente. Resultados de su medicion en una muestra de hospitales del sistema nacional de salud Español. Madrid: Ministerio de Sanidad y Consumo; 2008. 95 p.

ASSOCIATION WITH VULNERABLE POPULATIONS

Unspecified

BURDEN OF ILLNESS

See the "Rationale" field.

UTILIZATION

Unspecified

COSTS

Unspecified

Institute of Medicine National Healthcare Quality Report Categories

IOM CARE NEED

End of Life Care
Getting Better
Living with Illness

IOM DOMAIN

Effectiveness
Safety

Data Collection for the Measure

CASE FINDING

Users of care only

DESCRIPTION OF CASE FINDING

Central venous catheters (CVCs) observed

DENOMINATOR SAMPLING FRAME

Patients associated with provider

DENOMINATOR INCLUSIONS/EXCLUSIONS

Inclusions

Total number of central venous catheters (CVCs) studied x lumens not in use x possible failures assessed

Exclusions

None

RELATIONSHIP OF DENOMINATOR TO NUMERATOR

All cases in the denominator are equally eligible to appear in the numerator

DENOMINATOR (INDEX) EVENT

Therapeutic Intervention

DENOMINATOR TIME WINDOW

Time window is a single point in time

NUMERATOR INCLUSIONS/EXCLUSIONS

Inclusions

Number of failures in the care of central venous catheters (CVCs) observed* x 100

*Items to be assessed are the following:

- Use of sterile gauze or transparent sterile dressing to cover catheter insertion point
- Caps on lumens not in use
- Clamps on lumens not in use

Exclusions

None

MEASURE RESULTS UNDER CONTROL OF HEALTH CARE PROFESSIONALS, ORGANIZATIONS AND/OR POLICYMAKERS

The measure results are somewhat or substantially under the control of the health care professionals, organizations and/or policymakers to whom the measure applies.

NUMERATOR TIME WINDOW

Encounter or point in time

DATA SOURCE

Special or unique data

LEVEL OF DETERMINATION OF QUALITY

Individual Case

PRE-EXISTING INSTRUMENT USED

None

Computation of the Measure

SCORING

Rate

INTERPRETATION OF SCORE

Better quality is associated with a lower score

ALLOWANCE FOR PATIENT FACTORS

Unspecified

STANDARD OF COMPARISON

Internal time comparison

Evaluation of Measure Properties

EXTENT OF MEASURE TESTING

After pilot testing, the set of indicators has been measured in a random sample of 25 Spanish hospitals, stratified by hospital size. The main objective has been to field test the feasibility of measurement in the various settings representing real life situations in the context of the Spanish Health Care System.

Both the whole indicators validation report and the results of the baseline measurement in a sample of the Spanish National Health Service (NHS) hospitals may be accessed and downloaded from the Spanish Ministry of Health web page (in Spanish):

- [Validation report](#)
- [Results of baseline measurement in Spanish NHS hospitals](#)

EVIDENCE FOR RELIABILITY/VALIDITY TESTING

Ministerio de Sanidad y Consumo. Construcción y validación de indicadores de buenas prácticas sobre seguridad del paciente. Madrid: Ministerio de Sanidad y Consumo; 2008. 178 p.

Ministerio de Sanidad y Consumo. Indicadores de buenas prácticas sobre seguridad del paciente. Resultados de su medición en una muestra de hospitales del sistema nacional de salud Español. Madrid: Ministerio de Sanidad y Consumo; 2008. 95 p.

Ministry of Health. Safe practices indicators project: background, summary of methods and measurement strategies. Madrid: Ministry of Health; 2009 Feb 20. 97 p.

Identifying Information

ORIGINAL TITLE

Percentage of maintenance failures in central venous catheters (CVCs).

MEASURE COLLECTION

[Safe Practices Indicators Project](#)

MEASURE SET NAME

[Adopting Safe Practices in Specific Clinical Care Settings or for Specific Processes of Care](#)

MEASURE SUBSET NAME

[Prevention of Central Venous Catheter \(CVC\)-associated Infections](#)

SUBMITTER

Spanish Agency for Healthcare Quality of the Spanish Ministry of Health

DEVELOPER

Grupo de Investigación sobre Gestión de la Calidad en Servicios de Salud, University of Murcia, under contract to the Spanish Ministry of Health

FUNDING SOURCE(S)

Agency for Quality, Spanish Ministry of Health

COMPOSITION OF THE GROUP THAT DEVELOPED THE MEASURE

Saturno, Pedro J., MD, DrPH; Group Director and Project PI

Castillo, Carmen; López, M. José; Ramón, Teresa; Nurses

Carrillo, Andrés, MD; Intensive Care Specialist

Iranzo, M. Dolores; Hospital pharmacist

Soria, Victor, MD; Surgeon

Parra, Pedro, MD; Gomis, Rafael, MD; Gascón, Juan J., MD; Quality Management Specialists

FINANCIAL DISCLOSURES/OTHER POTENTIAL CONFLICTS OF INTEREST

Project entirely financed by the Spanish Ministry of Health.

ADAPTATION

Measure was not adapted from another source.

RELEASE DATE

2009 Feb

MEASURE STATUS

This is the current release of the measure.

SOURCE(S)

Ministry of Health. Safe practices indicators project: background, summary of methods and measurement strategies. Madrid: Ministry of Health; 2009 Feb 20. 97 p.

MEASURE AVAILABILITY

The individual measure, "Percentage of Maintenance Failures in Central Venous Catheters (CVCs)," is published in "Safe Practices Indicators Project: Background, Summary of Methods and Measurement Strategies."

For more information, contact:

- Ministry of Health and Social Policy, Paseo del Prado, 18-20, planta baja, esquina con Lope de Vega. 28014 Madrid; Phone: +34 901 400 100; Fax: +34 915 96 44 80; Web site: www.msc.es/en/home.htm.
OR
- Pedro J. Saturno, Facultad de Medicina, Universidad de Murcia, 30100 Espinardo-Murcia (Spain); Phone: 868 883 948; Fax: +34 868 883947; E-mail: psaturno@um.es; Web site: <http://www.calidadsalud.com>.

COMPANION DOCUMENTS

The following are available:

- Ministerio de Sanidad y Consumo. Construcción y validación de indicadores de buenas prácticas sobre seguridad del paciente. Madrid: Ministerio de Sanidad y Consumo; 2008. 178 p. This document is available in Portable Document Format (PDF) from the [Ministry of Health and Social Policy Web site](http://www.msc.es/en/home.htm) (in Spanish).
- Ministerio de Sanidad y Consumo. Indicadores de buenas prácticas sobre seguridad del paciente. Resultados de su medición en una muestra de hospitales del sistema nacional de salud Español. Madrid: Ministerio de Sanidad y Consumo; 2008. 95 p. This document is available in PDF from the [Ministry of Health and Social Policy Web site](http://www.calidadsalud.com) (in Spanish).

NQMC STATUS

This NQMC summary was completed by ECRI Institute on August 21, 2009. The information was verified by the measure developer on December 16, 2009.

COPYRIGHT STATEMENT

No copyright restrictions apply.

Disclaimer

NQMC DISCLAIMER

The National Quality Measures Clearinghouse™ (NQMC) does not develop, produce, approve, or endorse the measures represented on this site.

All measures summarized by NQMC and hosted on our site are produced under the auspices of medical specialty societies, relevant professional associations, public and private organizations, other government agencies, health care organizations or plans, individuals, and similar entities.

Measures represented on the NQMC Web site are submitted by measure developers, and are screened solely to determine that they meet the NQMC Inclusion Criteria which may be found at <http://www.qualitymeasures.ahrq.gov/about/inclusion.aspx>.

NQMC, AHRQ, and its contractor ECRI Institute make no warranties concerning the content or its reliability and/or validity of the quality measures and related materials represented on this site. The inclusion or hosting of measures in NQMC may not be used for advertising or commercial endorsement purposes.

Readers with questions regarding measure content are directed to contact the measure developer.

[Copyright/Permission Requests](#)

Date Modified: 1/18/2010



